



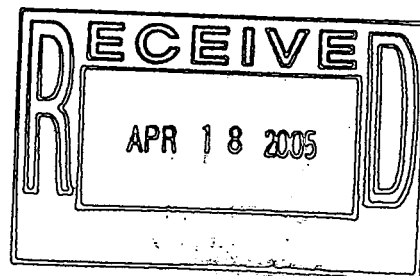
# **Rocky Flats Environmental Technology Site**

## **TYPE 1 RECONNAISSANCE LEVEL CHARACTERIZATION REPORT (RLCR)**

### **BUILDING T707C CLOSURE PROJECT**

**REVISION 0**

**March 31, 2005**



**CLASSIFICATION REVIEW NOT REQUIRED PER  
EXEMPTION NUMBER CEX-005-02**

**ADMIN RECORD**

1A-A-C

1A-A-002597


**TYPE 1  
RECONNAISSANCE LEVEL CHARACTERIZATION  
REPORT (RLCR)**

**BUILDING T707C CLOSURE PROJECT**

**REVISION 0**

**March 31, 2005**

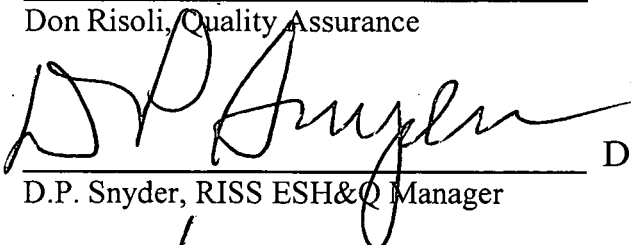
**Reviewed by:**

  
Don Risoli, Quality Assurance

Date:

4/4/05

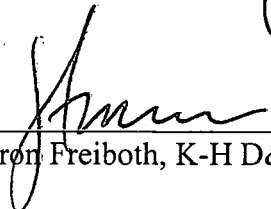
**Reviewed by:**

  
D.P. Snyder, RISS ESH&Q Manager

Date:

4/4/05

**Approved by:**

  
Cameron Freiboth, K-H D&D Project Manager

Date:

04/04/05

## TABLE OF CONTENTS

|   |           |
|---|-----------|
| <b>ABBREVIATIONS/ACRONYMS .....</b>   | <b>IV</b> |
| <b>EXECUTIVE SUMMARY .....</b>  | <b>V</b>  |
| <b>1 INTRODUCTION .....</b>   | <b>1</b>  |
| 1.1 PURPOSE .....   | 1         |
| 1.2 SCOPE.....  | 1         |
| 1.3 DATA QUALITY OBJECTIVES .....   | 1         |
| <b>2 HISTORICAL SITE ASSESSMENT .....</b>   | <b>2</b>  |
| <b>3 RADIOLOGICAL CHARACTERIZATION AND HAZARDS .....</b>                                      | <b>2</b>  |
| <b>4 CHEMICAL CHARACTERIZATION AND HAZARDS.....</b>   | <b>3</b>  |
| 4.1 ASBESTOS .....  | 3         |
| 4.2 BERYLLIUM (BE).....   | 3         |
| 4.3 RCRA/CERCLA CONSTITUENTS [INCLUDING METALS AND VOLATILE ORGANIC COMPOUNDS<br>(VOCs)]..... | 4         |
| 4.4 POLYCHLORINATED BIPHENYLS (PCBS).....   | 4         |
| <b>5 PHYSICAL HAZARDS.....</b>  | <b>4</b>  |
| <b>6 DATA QUALITY ASSESSMENT.....</b>   | <b>4</b>  |
| <b>7 DECOMMISSIONING WASTE TYPES AND VOLUME ESTIMATES .....</b>                               | <b>5</b>  |
| <b>8 FACILITY CLASSIFICATION AND CONCLUSIONS.....</b>   | <b>5</b>  |
| <b>9 REFERENCES .....</b>   | <b>6</b>  |

### ATTACHMENTS

- A Facility Location Map
- B Historical Site Assessment Report
- C Radiological Data Summaries and Survey Maps
- D Chemical Data Summaries and Sample Maps
- E Data Quality Assessment (DQA) Detail

## ABBREVIATIONS/ACRONYMS

|                     |   |
|---------------------|---|
| ACM                 | Asbestos containing material  |
| Be                  | Beryllium   |
| CDPHE               | Colorado Department of Public Health and the Environment                |
| CERCLA              | Comprehensive Emergency Response, Compensation and Liability Act        |
| DCGL <sub>EMC</sub> | Derived Concentration Guideline Level – elevated measurement comparison |
| DCGL <sub>w</sub>   | Derived Concentration Guideline Level – Wilcoxon Rank Sum Test          |
| D&D                 | Decontamination and Decommissioning                                     |
| DDCP                | Decontamination and Decommissioning Characterization Protocol           |
| DOE                 | U.S. Department of Energy   |
| DPP                 | Decommissioning Program Plan  |
| DQA                 | Data quality assessment   |
| DQOs                | Data quality objectives   |
| EPA                 | U.S. Environmental Protection Agency                                    |
| FDPM                | Facility Disposition Program Manual                                     |
| HVAC                | Heating, ventilation, air conditioning                                  |
| HSAR                | Historical Site Assessment Report                                       |
| IHSS                | Individual Hazardous Substance Site                                     |
| IWCP                | Integrated Work Control Package   |
| K-H                 | Kaiser-Hill   |
| LBP                 | Lead-based paint  |
| LLW                 | Low-level waste   |
| MARSSIM             | Multi-Agency Radiation Survey and Site Investigation Manual             |
| MDA                 | Minimum detectable activity   |
| MDC                 | Minimum detectable concentration  |
| NORM                | Naturally occurring radioactive material                                |
| NRA                 | Non-Rad-Added Verification  |
| OSHA                | Occupational Safety and Health Administration                           |
| PARCC               | Precision, accuracy, representativeness, comparability and completeness |
| PCBs                | Polychlorinated Biphenyls   |
| PDS                 | Pre-demolition survey   |
| QC                  | Quality Control   |
| RCRA                | Resource Conservation and Recovery Act                                  |
| RFCA                | Rocky Flats Cleanup Agreement   |
| RFETS               | Rocky Flats Environmental Technology Site                               |
| RFFO                | Rocky Flats Field Office  |
| RLC                 | Reconnaissance Level Characterization                                   |
| RLCR                | Reconnaissance Level Characterization Report                            |
| RSP                 | Radiological Safety Practices   |
| SVOCs               | Semi-volatile organic compounds   |
| TCLP                | Toxicity Characteristic Leaching Procedure                              |
| TSA                 | Total surface activity  |
| VOCs                | Volatile organic compounds  |

## EXECUTIVE SUMMARY

A Reconnaissance Level Characterization (RLC) was performed to enable facility "Typing" per the DPP (10/8/98) and compliant disposition and waste management of Building T707C. Because this facility was an anticipated Type 1 facility, the characterization was performed in accordance with the Pre-Demolition Survey Plan (MAN-127-PDSP). All facility surfaces were characterized in this RLC, including the interior and exterior surfaces (i.e., floor, walls, ceiling and roof). Environmental media beneath and surrounding the facility was not within the scope of this RLCR and will be addressed at a future date using the Soil Disturbance Permit process and in compliance with RFCA.

The RLC encompassed both radiological and chemical characterization to enable compliant disposition and waste management pursuant to the D&D Characterization Protocol (MAN-077-DDCP). The characterization built upon physical, chemical and radiological hazards identified in the facility-specific Historical Site Assessment Report.

Results indicate that no radiological contamination exists in excess of the PDSP unrestricted release limits of DOE Order 5400.5. Representative laboratory results of building materials suspected of containing asbestos were "None Detected." All beryllium sample results were less than  $0.1 \mu\text{g}/100\text{cm}^2$ . Based upon this RLCR, Building T707C is considered a Type 1 facility and can be demolished. To ensure the facility remains free of contamination and the RLC data remain valid, Level 2 Isolation Controls have been established and the facility posted accordingly.

## **1 INTRODUCTION**

A Reconnaissance Level Characterization (RLC) was performed to enable compliant disposition and waste management of Building T707C. Because this facility is an anticipated Type 1 facility, a PDS characterization was performed. All facility surfaces were characterized in this RLC, including the interior and exterior surfaces of the facility (i.e., floor, walls, ceiling and roof). Environmental media beneath and surrounding the facility was not within the scope of this RLC Report (RLCR) and will be addressed at a future date using the Soil Disturbance Permit process and in compliance with RFCA.

As part of the Rocky Flats Environmental Technology Site (RFETS) Closure Project, numerous facilities will be removed, among these is Building T707C. The location of this facility is shown in Attachment A. This facility no longer supports the RFETS mission and needs to be removed to reduce Site infrastructure, risks and/or operating costs.

Before this facility can be removed, a Pre-Demolition Survey (PDS) must be conducted; this document presents the PDS results. The PDS was conducted pursuant to the Decontamination and Decommissioning Characterization Protocol (MAN-077-DDCP) and the Pre-Demolition Survey Plan for D&D Facilities (MAN-127-PDSP). The PDS built upon physical, chemical and radiological hazards identified in the facility-specific Historical Site Assessment Report.

### **1.1 Purpose**

The purpose of this report is to communicate and document the results of the PDS effort. A PDS is performed before building demolition to define the pre-demolition radiological and chemical conditions of a facility. Pre-demolition conditions are compared with the unrestricted release limits for radiological and non-radiological contaminants. PDS results will enable project personnel to make final disposition decisions, develop related worker health and safety controls, and estimate waste volumes by waste types.

### **1.2 Scope**

This report presents the pre-demolition radiological and chemical conditions of Building T707C. Environmental media beneath and surrounding this facility are not within the scope of this RLCR and will be addressed using the Soil Disturbance Permit process and in compliance with RFCA.

### **1.3 Data Quality Objectives**

The Data Quality Objectives (DQOs) used in designing this RLC were the same DQOs identified in the Pre-Demolition survey Plan for D&D Facilities (MAN-127-PDSP.) Refer to section 2.0 of MAN-127-PDSP for these DQOs.

## 2 HISTORICAL SITE ASSESSMENT

A facility-specific Historical Site Assessment (HSA) was conducted to understand the facility history and related hazards. The assessment consisted of facility walkdowns, interviews and document reviews, including review of the Historical Release Report (refer to the D&D Characterization Protocol, MAN-077-DDCP). These assessments were used to identify data gaps and needs, and to develop radiological and chemical characterization packages. The facility-specific HSA was documented in a Historical Site Assessment Report (HSAR) for the Area 0 – Group 3 Facilities (Buildings T707C and T707E), Dated March 2005, Revision 0. Refer to Attachment B for a copy of the HSAR. In summary, the HSAR identified a low potential for radiological and chemical hazards.

## 3 RADIOLOGICAL CHARACTERIZATION AND HAZARDS

Building T707C was characterized for radiological hazards per the PDSP. Radiological characterization was performed to define the nature and extent of radioactive materials that may be present on the facility surfaces. Measurements were performed to evaluate the contaminants of concern. Based upon a review of historical and process knowledge, building walk-downs, and MARSSIM guidance, a Radiological Characterization Plan was developed during the planning phase that describe the minimum survey requirements (refer to the RISS Characterization Project files).

One radiological survey package was developed for the interior and exterior of Building T707C. Survey package 707C01 was developed in accordance with Radiological Safety Practices (RSP) 16.01, *Radiological Survey/Sampling Package Design, Preparation, Control, Implementation and Closure*. Total surface activity (TSA), removable surface activity (RSA), and scan measurements were collected in accordance with RSP 16.02 *Radiological Surveys of Surfaces and Structures*. Radiological survey data were verified, validated and evaluated in accordance with RSP 16.04, *Radiological Survey/Sample Data Analysis*. Quality control measures were implemented relative to the survey process in accordance with RSP 16.05, *Radiological Survey/Sample Quality Control*.

A total of thirty-two (32) TSA measurements (15 random, 15 biased and 2 QC) and thirty (30) RSA measurements (15 random and 15 biased) were performed, and a minimum 10% scan of the interior and exterior surfaces of the facility was performed. The RLC data confirmed that this facility does not contain radiological contamination above the surface contamination guidelines provided in the PDSP. Radiological survey data, statistical analysis results, and survey locations are presented in Attachment C, Radiological Data Summary and Survey Maps. The radiological survey unit package is maintained in the RISS Characterization Project files. Isolation control postings are displayed on the facility to ensure no radioactive materials are inadvertently introduced.

## 4 CHEMICAL CHARACTERIZATION AND HAZARDS

Building T707C was characterized for chemical hazards per the PDSP. Chemical characterization was performed to determine the nature and extent of chemical contamination that may be present on or in the facility. Based upon a review of historical and process knowledge, visual inspections, and PDSP DQOs, additional sampling needs were determined. A Chemical Characterization Plan (refer to RISS Characterization Project files) was developed during the planning phase that describe sampling requirements and the justification for the sample locations and estimated sample numbers. Contaminants of concern included asbestos, beryllium, RCRA/CERCLA constituents, and PCBs. Refer to Attachment D, Chemical Data Summaries and Sample Maps, for details on sample results and sample locations.

### 4.1 Asbestos

A survey of building materials suspected of containing asbestos was conducted in Building T707C in accordance with the RLCP. A CDPHE-certified asbestos inspector conducted the inspection in accordance with the *Asbestos Characterization Protocol, PRO-563-ACPR, Revision 1*. A visual and tactile inspection of Building T707C was completed. Building materials suspected of containing asbestos were identified for sampling at the discretion of the inspector.

A comprehensive, invasive asbestos inspection was conducted to determine the presence of friable and non-friable asbestos containing building materials. All sample results were "Non Detect". The trailer has a sheet metal roof that covers a layer of fibrous glass insulation. Asbestos laboratory sample data and location maps are contained in Attachment D, *Chemical Data Summaries and Sample Maps*.

### 4.2 Beryllium (Be)

Based on the HSAR and personnel interviews, Building T707C was an anticipated Type 1 facility. There was not, however, adequate historical and process knowledge to conclude that beryllium was not used or stored in this building. Therefore, biased beryllium sampling was performed in accordance with the PDSP and the *Beryllium Characterization Procedure, PRO-536-BCPR, Revision 0, September 9, 1999*. Biased sample locations corresponded with the most probable areas of dust accumulation (including beryllium dust), assuming airborne deposition.

All beryllium results were less than  $0.1 \mu\text{g}/100\text{cm}^2$  and meet the unrestricted release limits. Beryllium laboratory sample data and location maps are contained in Attachment D, Chemical Data Summaries and Sample Maps.

#### **4.3 RCRA/CERCLA Constituents [including metals and volatile organic compounds (VOCs)]**

Based on a review of the HSAR and a facility walk-down, Building T707C was used primarily as an office trailer, and never contained any operations that could lead to RCRA/CERCLA contamination, therefore, RCRA/CERCLA constituent sampling was not performed in this facility as part of the RLC.

Sampling for lead in paint in Building T707C was not performed. Environmental Waste Compliance Guidance #27, *Lead-based Paint (LBP) and Lead-based paint Debris Disposal*, states that LBP debris generated outside of currently identified high contamination areas shall be managed as non-hazardous (solid) waste, and additional analysis for characteristics of hazardous waste derived from LBP is not a requirement for disposal. There were no high contamination areas in Building T707C.

#### **4.4 Polychlorinated Biphenyls (PCBs)**

Based on the HSARs, interviews and facility walk-downs of Building T707C, no PCB-containing equipment was ever present in the building, making the potential for PCB contamination resulting from spills highly unlikely. Therefore, PCB sampling was not performed in Building T707C as part of the RLC. Based on the age of Building T707C (constructed after 1980), paints used do not contain PCBs. Additionally, there are no suspected PCB light ballasts in this facility. However, all light ballasts will be inspected and if leaking PCB ballasts are discovered, they will be removed and managed accordingly.

### **5 PHYSICAL HAZARDS**

Physical hazards associated with Building T707C consist of those common in standard industrial environments and include hazards associated with energized systems, utilities, and trips and falls. The facility has been relatively well maintained and is in good physical condition, and therefore, does not present hazards associated with building deterioration. Physical hazards are controlled by the Site Occupational Safety and Industrial Hygiene Program, which is based on OSHA regulations, DOE orders, and standard industry practices.

### **6 DATA QUALITY ASSESSMENT**

Data used in making management decisions for decommissioning of Building T707C, and consequent waste management, are of adequate quality to support the decisions documented in this report. The data presented in this report (Attachments C and D) were verified and validated relative to DOE quality requirements, applicable EPA guidance, and original DQOs of the project.

In summary, the Verification and Validation (V&V) process corroborates that the following elements of the characterization process are adequate:

- the *number* of samples and surveys;
- the *types* of samples and surveys;
- the sampling/survey process as implemented "in the field"; and,
- the laboratory analytical process, relative to accuracy and precision considerations.

Details of the DQA are provided in Attachment E.

## 7 DECOMMISSIONING WASTE TYPES AND VOLUME ESTIMATES

The demolition and disposal of Building T707C will generate sanitary waste. Estimated waste volumes are presented below. All waste can be disposed of as sanitary waste, there is no radioactive or hazardous waste.

| Waste Volume Estimates and Material Types – Building T707C |                     |                 |                  |                                      |                          |                |             |
|--|---------------------|-----------------|------------------|--------------------------------------|--------------------------|----------------|-------------|
| Facility   | Concrete<br>(cu ft) | Wood<br>(cu ft) | Metal<br>(cu ft) | Corrugated<br>Sheet Metal<br>(cu ft) | Wall<br>Board<br>(cu ft) | ACM<br>(cu ft) | Other Waste |
| T707C  | 0                   | 350             | 500              | 700                                  | 900                      | 0              | None        |

## 8 FACILITY CLASSIFICATION AND CONCLUSIONS

Based on the analysis of radiological, chemical and physical hazards, Building T707C is classified as a RFCA Type 1 facility pursuant to the RFETS Decommissioning Program Plan (DPP; K-H, 1999) and can be demolished. The Type 1 classification is based on a review of historical and process knowledge, and newly acquired RLC/PDS data.

The RLC of Building T707C was performed in accordance with the DDCP and PDSP. All PDSP DQOs were met, and all data satisfied the PDSP DQA criteria. Building T707C did not contain radiological or hazardous waste. Environmental media beneath and surrounding the facility will be addressed at a future date using the Soil Disturbance Permit process and in compliance with RFCA.

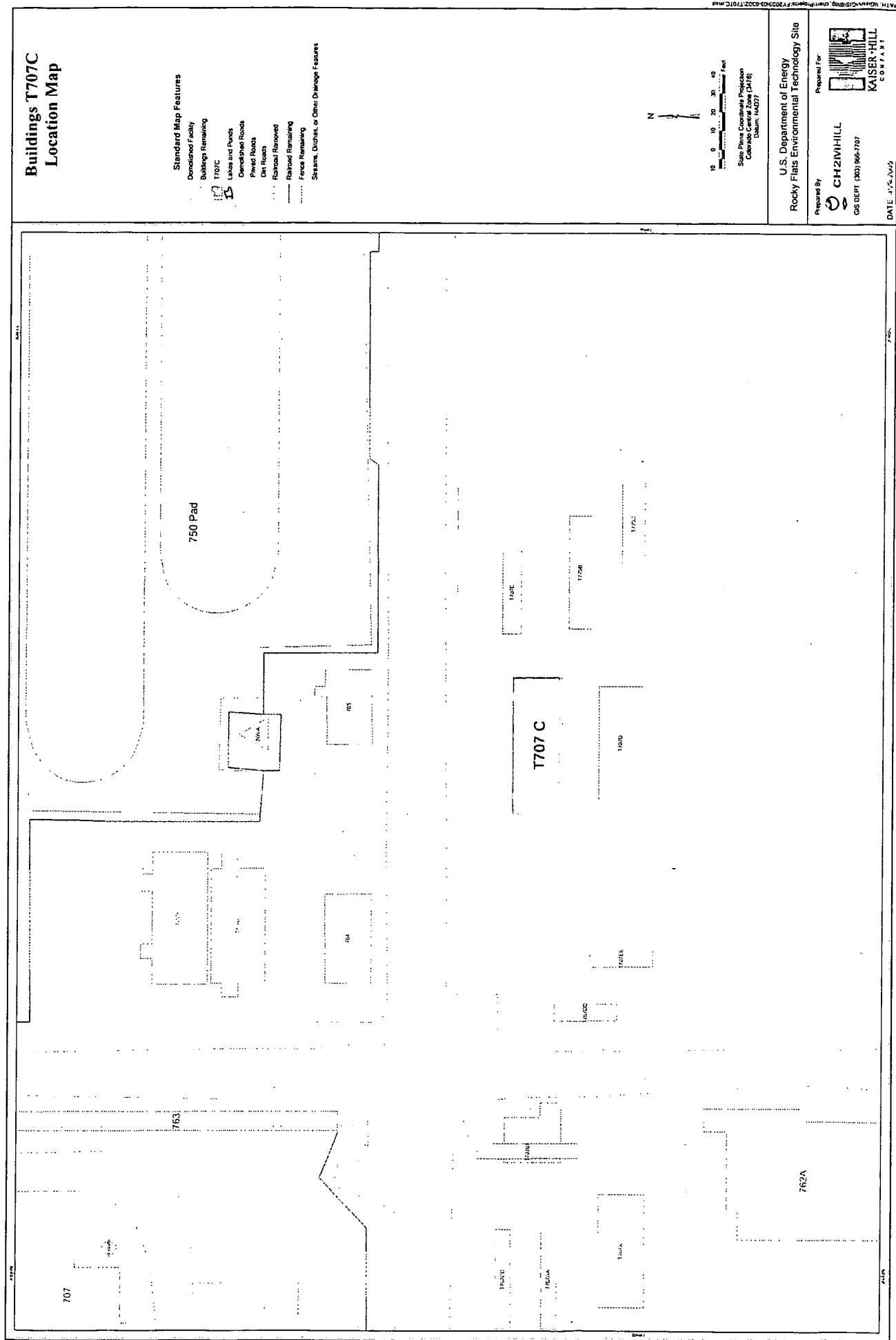
To ensure this Type 1 facility remains free of contamination and the RLC data remain valid, Level 2 Isolation Controls have been established and the facility posted accordingly.

## 9 REFERENCES

- DOE/RFFO, CDPHE, EPA, 1996. *Rocky Flats Cleanup Agreement (RFCA)*, July 19, 1996.
- DOE Order 5400.5, *"Radiation Protection of the Public and the Environment."*
- EPA, 1994. *"The Data Quality Objective Process,"* EPA QA/G-4.
- K-H, 1999. *Decommissioning Program Plan*, June 21, 1999.
- MAN-131-QAPM, *Kaiser-Hill Team Quality Assurance Program*, Rev. 1, November 1, 2001.
- MAN-076-FDPM, *Facility Disposition Program Manual*, Rev. 3, January 1, 2002.
- MAN-077-DDCP, *Decontamination and Decommissioning Characterization Protocol*, Rev. 3, July 15, 2002.
- MAN-127-PDSP, *Pre-Demolition Survey Plan for D&D Facilities*, Rev. 1, July 15, 2002.
- MARSSIM - *Multi-Agency Radiation Survey and Site Investigation Manual*, December 1997 (NUREG-1575, EPA 402-R-97-016).
- PRO-475-RSP-16.01, *Radiological Survey/Sampling Package Design, Preparation, Control, Implementation, and Closure*, Rev. 1, May 22, 2001.
- PRO-476-RSP-16.02, *Pre-Demolition (Final Status) Radiological Surveys of Surfaces and Structures*, Rev. 1, May 22, 2001.
- PRO-477-RSP-16.03, *Radiological Samples of Building Media*, Rev. 1, May 22, 2001.
- PRO-478-RSP-16.04, *Radiological Survey/Sample Data Analysis for Final Status Survey*, Rev. 1, May 22, 2001.
- PRO-479-RSP-16.05, *Radiological Survey/Sample Quality Control for Final Status Survey*, Rev. 1, May 22, 2001.
- PRO-563-ACPR, *Asbestos Characterization Procedure*, Revision 0, August 24, 1999.
- PRO-536-BCPR, *Beryllium Characterization Procedure*, Revision 0, August 24, 1999.
- RFETS, *Environmental Waste Compliance Guidance #25, Management of Polychlorinated Biphenyls (PCBs) in Paint and Other Bulk Product Waste During Facility Disposition*.
- RFETS, *Environmental Waste Compliance Guidance #27, Lead-Based Paint (LBP) and Lead-Based Paint Debris Disposal*.
- RFCA Standard Operation Protocol for Recycling Concrete*, September 28, 1999.
- Historical Site Assessment Report for Area 0 – Group 3 Facilities*, Dated March 2005, Revision 0.

# ATTACHMENT A

## Facility Location Map



707

763

750 Pad

707C

707D

707E

707F

707G

707H

707I

707J

707K

707L

707M

707N

707O

707P

707Q

707R

707S

707T

707U

707V

707W

707X

707Y

707Z

707AA

707AB

707AC

707AD

707AE

707AF

707AG

707AH

707AI

707AJ

707AK

707AL

707AM

707AN

707AO

707AP

707AQ

707AR

707AS

707AT

707AU

707AV

707AW

707AX

707AY

707AZ

707BA

707BB

707BC

707BD

707BE

707BF

707BG

707BH

707BI

707BJ

707BK

707BL

707BM

707BN

707BO

707BP

707BQ

707BR

707BS

707BT

707BU

707BV

707BW

707BX

707BY

707BZ

707CA

707CB

707CC

707CD

707CE

707CF

707CG

707CH

707CI

707CJ

707CK

707CL

707CM

707CN

707CO

707CP

707CQ

707CR

707CS

707CT

707CU

707CV

707CW

707CX

707CY

707CZ

707DA

707DB

707DC

707DD

707DE

707DF

707DG

707DH

707DI

707DJ

707DK

707DL

707DM

707DN

707DO

707DP

707DQ

707DR

707DS

707DT

707DU

707DV

707DW

707DX

707DY

707DZ

707EA

707EB

707EC

707ED

707EE

707EF

707EG

707EH

707EI

707EJ

707EK

707EL

707EM

707EN

707EO

707EP

707EQ

707ER

707ES

707ET

707EU

707EV

707EW

707EX

707EY

707EZ

707FA

707FB

707FC

707FD

707FE

707FF

707FG

707FH

707FI

707FJ

707FK

707FL

707FM

707FN

707FO

707FP

707FQ

707FR

707FS

707FT

707FU

707FV

707FW

707FX

707FY

707FZ

707GA

707GB

707GC

707GD

707GE

707GF

707GG

707GH

707GI

707GJ

707GK

707GL

707GM

707GN

707GO

707GP

707GQ

707GR

707GS

707GT

707GU

707GV

707GW

707GX

707GY

707GZ

707HA

707HB

707HC

707HD

707HE

707HF

707HG

707HH

707HI

707HJ

707HK

707HL

707HM

707HN

707HO

707HP

707HQ

707HR

707HS

707HT

707HU

707HV

707HW

707HX

707HY

707HZ

707IA

707IB

707IC

707ID

707IE

707IF

707IG

707IH

707II

707IJ

707IK

707IL

707IM

707IN

707IO

707IP

707IQ

707IR

707IS

707IT

707IU

707IV

707IW

707IX

707IY

707IZ

707JA

707JB

707JC

707JD

707JE

707JF

707JG

707JH

707JI

707JJ

707JK

707JL

707JM

707JN

707JO

707JP

707JQ

707JR

707JS

707JT

707JU

707JV

707JW

707JX

707JY

707JZ

707KA

707KB

707KC

707KD

707KE

707KF

707KG

707KH

707KI

707KJ

707KK

707KL

707KM

707KN

707KO

707KP

707KQ

707KR

707KS

707KT

707KU

707KV

707KW

707KX

707KY

707KZ

707LA

707LB

707LC

707LD

707LE

707LF

707LG

707LH

707LI

707LJ

707LK

707LM

707LN

707LO

707LP

707LQ

707LR

707LS

707LT

707LU

707LV

707LW

707LX

707LY

707LZ

707MA

707MB

707MC

707MD

707ME

707MF

707MG

707MH

707MI

707MJ

707MK

707ML

707MM

707MN

707MO

707MP

707MQ

707MR

707MS

707MT

707MU

707MV

707MW

707MX

707MY

707MZ

707NA

707NB

707NC

707ND

707NE

707NF

707NG

707NH

707NI

707NJ

707NK

707NL

707NM

707NN

707NO

707NP

707NQ

707NR

707NS

707NT

707NU

707NV

707NW

707NX

707NY

707NZ

707OA

707OB

707OC

707OD

707OE

707OF

707OG

707OH

707OI

707OJ

707OK

707OL

707OM

707ON

707OO

707OP

707OQ

707OR

707OS

707OT

707OU

707OV

707OW

707OX

707OY

707OZ

707PA

707PB

707PC

707PD

707PE

707PF

707PG

707PH

707PI

707PJ

707PK

707PL

707PM

707PN

707PO

707PP

707PQ

707PR

707PS

707PT

707PU

707PV

707PW

707PX

707PY

707PZ

707QA

707QB

707QC

707QD

707QE

707QF

707QG

707QH

707QI

707QJ

707QK

707QL

707QM

707QN

707QO

707QP

707QQ

707QR

707QS

707QT

707QU

707QV

707QW

707QX

707QY

707QZ

707RA

707RB

707RC

707RD

707RE

707RF

707RG

707RH

707RI

707RJ

707RK

707RL

707RM

707RN

707RO

707RP

707RQ

707RR

707RS

707RT

707RU

707RV

707RW

707RX

707RY

707RZ

707SA

707SB

707SC

707SD

707SE

707SF

707SG

707SH

707SI

707SJ

707SK

707SL

707SM

707SN

707SO

707SP

707SQ

707SR

707SS

707ST

707SU

707SV

707SW

707SX

707SY

707SZ

707TA

707TB

707TC

707TD

707TE

707TF

707TG

707TH

707TI

707TJ

707TK

707TL

707TM

707TN

707TO

707TP

707TQ

707TR

707TS

707TT

707TU

707TV

707TW

707TX

707TY

707TZ

707UA

707UB

707UC

707UD

707UE

707UF

707UG

707UH

707UI

707UJ

707UK

707UL

707UM

707UN

707UO

707UP

707UQ

707UR

707US

707UT

707UU

707UV

707UW

707UX

707UY

707UZ

707VA

707VB

707VC

707VD

707VE

707VF

707VG

707VH

707VI

707VJ

707VK

707VL

707VM

707VN

707VO

707VP

707VQ

707VR

707VS

707VT

707VU

707VV

707VW

707VX

707VY

707VZ

707WA

707WB

707WC

707WD

707WE

707WF

707WG

707WH

707WI

707WJ

707WK

707WL

707WM

707WN

707WO

707WP

707WQ

707WR

707WS

707WT

707WU

707WV

707WW

707WX

707WY

707WZ

707XA

707XB

707XC

707XD

707XE

707XF

707XG

707XH

707XI

707XJ

707XK

707XL

707XM

707XN

707XO

707XP

707XQ

707XR

707XS

707XT

707XU

707XV

707XW

707XX

707XY

707XZ

707YA

707YB

707YC

707YD

707YE

707YF

707YG

707YH

707YI

707YJ

707YK

707YL

707YM

707YN

707YO

707YP

707YQ

707YR

707YS

707YT

707YU

707YV

707YW

707YX

707YY

707YZ

707ZA

707ZB

707ZC

707ZD

707ZE

707ZF

707ZG

707ZH

707ZI

707ZJ

707ZK

707ZL

707ZM

707ZN

707ZO

707ZP

707ZQ

707ZR

707ZS

707ZT

707ZU

707ZV

707ZW

707ZX

707ZY

707ZZ

762A

762B

762C

762D

762E

762F

762G

762H

762I

762J

762K

762L

762M

762N

762O

762P

762Q

762R

762S

762T

762U

762V

762W

762X

762Y

762Z

762AA

762AB

762AC

762AD

762AE

762AF

762AG

762AH

762AI

762AJ

762AK

762AL

762AM

762AN

762AO

762AP

762AQ

762AR

762AS

762AT

762AU

762AV

762AW

762AX

762AY

762AZ

762BA

76

# ATTACHMENT B

## Historical Site Assessment Report

**D&D RISS Facility Characterization  
Historical Site Assessment Report  
March 2005, Rev. 0**

**Facility ID: (Area 0 – Group 3) – Trailers T707C (T707C), and T707E (T707E)**

Anticipated Facility Type (1, 2, or 3): Trailers T707C and T707E are anticipated Type 1 facilities.

This facility-specific Historical Site Assessment (HSA) has been performed in accordance with:

*D&D Characterization Protocol*, RFETS MAN-077-DDCP, latest version, and  
*Facility Disposition Program Manual*, RFETS MAN-076-FDPM, latest version

**Physical Description**

Trailer T707C is a 1,960 square-foot general office trailer and was acquired in 1991. Trailer T707E is a 520 square-foot general office trailer and was acquired in 1995. The trailers have aluminum siding and aluminum skirting. The entrances have wooden stairs leading to a wooded enclosure. The interior walls are wallboard and the ceiling is wallboard with flush mounted light fixtures. The floors are carpeted.

Trailers T707C and T707E have the following utilities: electrical, natural gas, and phone lines. Fire protection is provided by wall mounted fire extinguishers.

**Historical Operations**

Trailers T707C was formally trailer T111A. Trailer T707E was formally Trailer T442A. Trailer T707C has historically been a general office trailer in support of either the Building 111 operations or the Building 707/776 operations. When T707C was located near Building 111, it was used by finance personnel and DOE Tiger teams.

Trailer T707E has historically been a general office and storage trailer in support of either the Building 442 operations or the Building 707/776 operations. When T707E was located near Building 442, it was used by filter change and custodial personnel. These trailers do not have a history of radiological or hazardous operations.

**Current Operational Status**

Trailers T707C and T707E currently house personnel.

**Contaminants of Concern**

**Asbestos**

*Describe any potential, likely, or known sources of Asbestos:*

There are no asbestos postings in the trailers. However the trailers will undergo an asbestos inspection, and sampling if necessary.

**Beryllium (Be)**

*Describe any potential, likely, or known Be production or storage locations:*

The trailers are not on the List of known Be Areas.

*Summarize any recent Be sampling results:*

No recent Be samples have been collected in the trailers.

**D&D RISS Facility Characterization  
Historical Site Assessment Report  
March 2005, Rev. 0**

**Lead**

*Describe any potential, likely, or known sources of Lead (e.g., paint, shielding, etc.):*

Lead in paint and lead in electrical equipment should not be a concern due to the age of construction.

**RCRA/CERCLA Constituents**

*Describe any potential, likely, or known sources of RCRA/CERCLA constituents (e.g., chemical storage, waste storage, and processes):*

T707C and T707E were not used as RCRA/CERCLA storage facilities. The only chemicals used in these facilities were general cleaning supplies.

See the "Environmental Concerns" section below for IHSSs and PACs associated with these buildings.

*Describe any potential, likely, or known spill locations (and sources, if any):*

No known spills.

*Describe methods in which spills were mitigated, if any:*

No known spills.

**PCBs**

*Describe any potential, likely, or known sources of PCBs (e.g., light ballasts, paints, equipment, etc.):*

Due to the age of these facilities, there should not be a concern with PCBs in paint, light ballasts, and electrical equipment. No PCBs operation where housed in the facilities.

*Describe any potential, likely, or known spill locations (and sources, if any):*

No known PCB spills occurred in these facilities.

*Describe methods in which spills were mitigated, if any:*

No known PCB spills occurred in these facilities.

**D&D RISS Facility Characterization  
Historical Site Assessment Report  
March 2005, Rev. 0**

**Radiological Contaminants**

*Describe any potential, likely, or known radiological production or storage locations:*

T707C and T707E were not radiologically posted nor housed any radiological operations.

See the "Environmental Concerns" section below for IHSSs and PACs associated with these buildings.

*Describe any potential, likely, or known spill locations (e.g., known leaking sealed radioactive sources, leaking waste drums, potentially contaminated drains, etc.):*

No known spills have occurred inside T707C and T707E.

*Describe methods in which spills were mitigated, If any:*

No known spills have occurred inside T707C and T707E.

*Describe any potential, likely, or known isotopes of concern (e.g., weapons grade plutonium, uranium isotopes, pure beta emitters, mixed fission products, etc.):*

The primary Isotope of concern includes, but is not limited to plutonium. There were no mixed fission products or pure beta emitters used in T707C and T707E.

*Describe any potential, likely, or known external facility contamination (e.g., stack release points, unfiltered ventilation, facility's physical location to known site releases, etc.):*

See section below for information on IHSSs PACs, and UBCs.

**Environmental Restoration Concerns**

*Describe any ER concerns that could affect facility characterization (e.g., IHSSs, PACs, UBCs):*

None applicable.

**Additional Information**

*Describe any additional information that may be useful during facility characterization (e.g., contaminant migration routes, waste handling operations, physical hazards, Historical Release Reports, WSRIC data, etc.):*

None

**References**

*Provide all sources of information utilized to gather data for facility history (e.g., documents, files, interviews):*

Sources reviewed to complete this HSA were the RFETS Facility List, the Historical Release Report, Site Master List of RCRA Units, and the Site IHSS, PAC, and UBC databases. None of the Buildings in this HSA have a WSRIC. In addition, a facility walkdown and interviews were performed.

**D&D RISS Facility Characterization  
Historical Site Assessment Report  
March 2005, Rev. 0**

| Waste Volume Estimates and Material Types   |                     |                 |                  |                                      |                       |                |                        |
|---|---------------------|-----------------|------------------|--------------------------------------|-----------------------|----------------|------------------------|
| Facility  | Concrete<br>(cu ft) | Wood<br>(cu ft) | Metal<br>(cu ft) | Corrugated<br>Sheet Metal<br>(cu ft) | Wall Board<br>(cu ft) | ACM<br>(cu ft) | Other Waste<br>(cu ft) |
| Trailer T707C   | 0                   | 350             | 500              | 700                                  | 900                   | TBD            | N/A                    |
| Trailer T707E   | 0                   | 250             | 200              | 300                                  | 400                   | TBD            | N/A                    |
| <p><b>Further Actions</b><br/> <i>Recommend any further actions, if any (e.g., characterization, decontamination, special handling, etc.):</i></p> <p>Begin the RLC/PDS process.</p>  |                     |                 |                  |                                      |                       |                |                        |
| <p><b>Note:</b><br/> This HSA was performed prior to SME walkdowns, and chemical and radiological characterization package preparations. SMEs should evaluate and/or verify all information during the RLC/PDS process. SMEs may need to review additional documentation and perform additional interviews. Information contained in this HSA only represents a "snapshot" in time. Subsequent data may be obtained during SME walkdowns and chemical and radiological characterization package preparations, which may conflict with this report. However, this report will not be amended, and the newer data will take precedence over the data in this report. Newer Data will appear in the RLCR/PDSR.</p> |                     |                 |                  |                                      |                       |                |                        |

Prepared By: Duane Parsons / /s/ Duane Parsons / 3/28/05  
Name Signature Date

# ATTACHMENT C

## Radiological Data Summaries and Survey Maps

# RLC FOR T707C

Survey Area: 0      Survey Unit: 707C01      Classification: 3  
 Building: T707C  
 Survey Unit Description: Trailer 707C (Interior & Exterior) all surfaces  
 Total Area: 939 sq. m.      Total Floor Area: 220 sq. m.

PAGE 1 OF 1

## Interior

### Room 1

### Closet 1

### Closet 2

### Office 1

### Office 2

## Exterior

### North Wall

### Roof

### South Wall

### East Wall

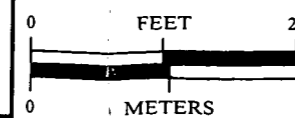
### West Wall

## SURVEY MAP LEGEND

- Smear & TSA Location
- ◆ Smear, TSA & Sample Location
- Open/Inaccessible Area
- Area in Another Survey Unit

Neither the United States Government nor Kaiser Hill Co., nor CH2MHill, nor any agency thereof, nor any of their employees, makes any warranty, express or implied, or assumes any legal liability or responsibility for the accuracy, completeness, or usefulness of any information, apparatus, product, or process disclosed, or represents that its use would not infringe privately owned rights.

Scan Survey Information  
 Survey Instrument ID #(s) & RCT ID #(s):  
 1, 2, 3, 5, 6



1 inch = 18 feet 1 grid sq. = 1 sq. m.

U.S. Department of Energy  
 Rocky Flats Environmental Technology Site

Prepared by: GIS Dept. 303-966-7707

CH2MHILL  
 Communications Group

MAP ID: 05-03021T707C\_SC

Prepared for:



Mar. 17, 2005

□ Scan Area

Survey Area: 0

Survey Unit: 707C01

Building: T707C

Description: Trailer 707C (Interior and Exterior) all surfaces

## Rocky Flats Environmental Technology Site Final Radiological Survey Summary Results

### Total Surface Activity Measurements

Nbr Random Measurements Required: 15

Nbr Biased Measurements Required: 15

Nbr QC Required: 2

Nbr Random Measurements Performed: 15

Nbr Biased Measurements Performed: 15

Nbr QC Performed: 2

#### Alpha

Maximum: 53.0 dpm/100cm<sup>2</sup>  
Minimum: -6.5 dpm/100cm<sup>2</sup>  
Mean: 12.2 dpm/100cm<sup>2</sup>  
Standard Deviation: 15.0  
QC Maximum: 29.6 dpm/100cm<sup>2</sup>  
QC Minimum: 17.1 dpm/100cm<sup>2</sup>  
QC Mean: 23.4 dpm/100cm<sup>2</sup>  
Transuranic DCGL<sub>w</sub>: 100.0 dpm/100cm<sup>2</sup>  
Transuranic DCGL<sub>EMC</sub>: 300.0 dpm/100cm<sup>2</sup>

### Removable Surface Activity Measurements

Nbr Random Measurements Required: 15

Nbr Biased Measurements Required: 15

Nbr Random Measurements Performed: 15

Nbr Biased Measurements Performed: 15

#### Alpha

Maximum: 4.2 dpm/100cm<sup>2</sup>  
Minimum: -0.3 dpm/100cm<sup>2</sup>  
Mean: 0.7 dpm/100cm<sup>2</sup>  
Standard Deviation: 1.5  
Transuranic DCGL<sub>w</sub>: 20.0 dpm/100cm<sup>2</sup>

### Media Sample Results

Nbr Random Required: 0

Nbr Biased Required: 0

Nbr Random Collected: 0

Nbr Biased Collected: 0

*Conclusion - A comparison of the random, biased and QC measurement results against the PDSP Table 7-1 Surface Contamination Guideline limits was conducted; the comparison demonstrates that this survey unit passes the criterion specified in the PDSP.*

Survey Area: 0

Survey Unit: 707C01

Building: T707C

Description: Trailer 707C (Interior and Exterior) all surfaces

## Instrument Data Sheet

| Inst/RCT<br>Number | RCT<br>ID | Analysis<br>Date | Instr<br>Model | Instru<br>S/N | Probe<br>Type | Calibration<br>Due Dt | Instru Efficiency |      | A-Priori MDA<br>(dpm/100cm <sup>2</sup> ) |      | Survey<br>Type |
|--------------------|-----------|------------------|----------------|---------------|---------------|-----------------------|-------------------|------|---|------|----------------|
|                    |           |                  |                |               |               |                       | Alpha             | Beta | Alpha                                     | Beta |                |
| 1                  | 712467    | 03/14/05         | Electra        | 657           | AP-6          | 06/13/05              | 0.184             | NA   | 48.0                                      | NA   | S              |
| 2                  | 712467    | 03/14/05         | Electra        | 2340          | DP-6          | 05/15/05              | 0.222             | NA   | 48.0                                      | NA   | T/S            |
| 3                  | 515538    | 03/14/05         | Electra        | 3370          | DP-6          | 07/27/05              | 0.213             | NA   | 48.0                                      | NA   | T/S            |
| 4                  | 511390    | 03/14/05         | SAC-4          | 767           | NA            | 08/03/05              | 0.330             | NA   | 10.0                                      | NA   | R              |
| 5                  | 511390    | 03/15/05         | Electra        | 3102          | DP-6          | 06/16/05              | 0.216             | NA   | 48.0                                      | NA   | Q/S            |
| 6                  | 712467    | 03/15/05         | Electra        | 1366          | DP-6          | 04/05/05              | 0.212             | NA   | 48.0                                      | NA   | T/S            |
| 7                  | 515538    | 03/15/05         | SAC-4          | 767           | NA            | 08/03/05              | 0.330             | NA   | 10.0                                      | NA   | R              |

Survey Types: T = Total Surface Activity, Q = TSA QC, S = Scan, R = Removable Surface Activity, I = Investigation

**Survey Area:** 0

**Survey Unit:** 707C01

**Building:** T707C

**Description:** Trailer 707C (Interior and Exterior) all surfaces

## Comments Sheet

**General** N/A  
**Comments:**

**TSA** N/A  
**Comments:**

**RSA** N/A  
**Comments:**

**Media** N/A  
**Comments:**

Survey Area: 0

Survey Unit: 707C01

Building: T707C

Description: Trailer 707C (Interior and Exterior) all surfaces

**Random Removable Surface Activity Data Sheet**

| Random Measurement Location | Inst / RCT Nbr | Net Alpha (dpm/100cm <sup>2</sup> ) | Net Beta (dpm/100cm <sup>2</sup> ) |     |
|-----------------------------|----------------|-------------------------------------|------------------------------------|-----|
| 707C01PRP-N001              | 4              | -0.3                                | N/A                                | N/A |
| 707C01PRP-N002              | 4              | -0.3                                | N/A                                | N/A |
| 707C01PRP-N003              | 7              | 1.2                                 | N/A                                | N/A |
| 707C01PRP-N004              | 4              | 4.2                                 | N/A                                | N/A |
| 707C01PRP-N005              | 4              | -0.3                                | N/A                                | N/A |
| 707C01PRP-N006              | 4              | 4.2                                 | N/A                                | N/A |
| 707C01PRP-N007              | 4              | -0.3                                | N/A                                | N/A |
| 707C01PRP-N008              | 7              | 4.2                                 | N/A                                | N/A |
| 707C01PRP-N009              | 4              | -0.3                                | N/A                                | N/A |
| 707C01PRP-N010              | 7              | 2.7                                 | N/A                                | N/A |
| 707C01PRP-N011              | 4              | -0.3                                | N/A                                | N/A |
| 707C01PRP-N012              | 7              | -0.3                                | N/A                                | N/A |
| 707C01PRP-N013              | 4              | 1.2                                 | N/A                                | N/A |
| 707C01PRP-N014              | 4              | -0.3                                | N/A                                | N/A |
| 707C01PRP-N015              | 4              | 1.2                                 | N/A                                | N/A |

Survey Area: 0

Survey Unit: 707C01

Building: T707C

Description: Trailer 707C (Interior and Exterior) all surfaces

**Biased Removable Surface Activity Data Sheet**

| Biased Measurement Location | Inst / RCT Nbr | Net Alpha (dpm/100cm <sup>2</sup> ) | Net Beta (dpm/100cm <sup>2</sup> ) |     |
|-----------------------------|----------------|-------------------------------------|------------------------------------|-----|
| 707C01PBP-N016              | 4              | 1.2                                 | N/A                                | N/A |
| 707C01PBP-N017              | 4              | -0.3                                | N/A                                | N/A |
| 707C01PBP-N018              | 4              | 2.7                                 | N/A                                | N/A |
| 707C01PBP-N019              | 4              | -0.3                                | N/A                                | N/A |
| 707C01PBP-N020              | 4              | -0.3                                | N/A                                | N/A |
| 707C01PBP-N021              | 4              | -0.3                                | N/A                                | N/A |
| 707C01PBP-N022              | 4              | -0.3                                | N/A                                | N/A |
| 707C01PBP-N023              | 4              | 1.2                                 | N/A                                | N/A |
| 707C01PBP-N024              | 4              | 1.2                                 | N/A                                | N/A |
| 707C01PBP-N025              | 4              | -0.3                                | N/A                                | N/A |
| 707C01PBP-N026              | 4              | -0.3                                | N/A                                | N/A |
| 707C01PBP-N027              | 4              | -0.3                                | N/A                                | N/A |
| 707C01PBP-N028              | 4              | -0.3                                | N/A                                | N/A |
| 707C01PBP-N029              | 4              | -0.3                                | N/A                                | N/A |
| 707C01PBP-N030              | 4              | -0.3                                | N/A                                | N/A |

25

Survey Area: 0

Survey Unit: 707C01

Building: T707C

Description: Trailer 707C (Interior and Exterior) all surfaces

**Random/QC Total Surface Activity Data Sheet**

| Random Measurement Location | Inst / RCT Nbr | Net Alpha (dpm/100cm <sup>2</sup> ) | Net Beta (dpm/100cm <sup>2</sup> ) |     |
|-----------------------------|----------------|-------------------------------------|------------------------------------|-----|
| 707C01PRP-N001              | 2              | 17.3                                | N/A                                | N/A |
| 707C01QRP-N001              | 5              | 29.6                                | N/A                                | N/A |
| 707C01PRP-N002              | 3              | -0.3                                | N/A                                | N/A |
| 707C01PRP-N003              | 6              | 43.6                                | N/A                                | N/A |
| 707C01PRP-N004              | 3              | 15.2                                | N/A                                | N/A |
| 707C01PRP-N005              | 2              | 14.2                                | N/A                                | N/A |
| 707C01PRP-N006              | 2              | 5.2                                 | N/A                                | N/A |
| 707C01PRP-N007              | 2              | 5.2                                 | N/A                                | N/A |
| 707C01PRP-N008              | 6              | 53.0                                | N/A                                | N/A |
| 707C01PRP-N009              | 3              | 24.6                                | N/A                                | N/A |
| 707C01QRP-N009              | 5              | 17.1                                | N/A                                | N/A |
| 707C01PRP-N010              | 6              | 5.9                                 | N/A                                | N/A |
| 707C01PRP-N011              | 2              | 5.2                                 | N/A                                | N/A |
| 707C01PRP-N012              | 6              | 24.7                                | N/A                                | N/A |
| 707C01PRP-N013              | 2              | -6.5                                | N/A                                | N/A |
| 707C01PRP-N014              | 3              | 3.0                                 | N/A                                | N/A |
| 707C01PRP-N015              | 2              | -0.7                                | N/A                                | N/A |

Survey Area: 0

Survey Unit: 707C01

Building: T707C

Description: Trailer 707C (Interior and Exterior) all surfaces

**Biased Total Surface Activity Data Sheet**

| Biased Measurement Location | Inst / RCT Nbr | Net Alpha (dpm/100cm <sup>2</sup> ) | Net Beta (dpm/100cm <sup>2</sup> ) |     |
|-----------------------------|----------------|-------------------------------------|------------------------------------|-----|
| 707C01PBP-N016              | 3              | 4.4                                 | N/A                                | N/A |
| 707C01PBP-N017              | 2              | -2.4                                | N/A                                | N/A |
| 707C01PBP-N018              | 2              | -5.1                                | N/A                                | N/A |
| 707C01PBP-N019              | 2              | 0.7                                 | N/A                                | N/A |
| 707C01PBP-N020              | 2              | 0.7                                 | N/A                                | N/A |
| 707C01PBP-N021              | 2              | 12.9                                | N/A                                | N/A |
| 707C01PBP-N022              | 2              | 6.6                                 | N/A                                | N/A |
| 707C01PBP-N023              | 3              | 10.5                                | N/A                                | N/A |
| 707C01PBP-N024              | 3              | 2.5                                 | N/A                                | N/A |
| 707C01PBP-N025              | 3              | 23.2                                | N/A                                | N/A |
| 707C01PBP-N026              | 2              | 9.7                                 | N/A                                | N/A |
| 707C01PBP-N027              | 2              | 45.8                                | N/A                                | N/A |
| 707C01PBP-N028              | 3              | 29.3                                | N/A                                | N/A |
| 707C01PBP-N029              | 2              | 6.6                                 | N/A                                | N/A |
| 707C01PBP-N030              | 3              | 10.5                                | N/A                                | N/A |

# ATTACHMENT D

## Chemical Data Summaries and Sample Maps

## Asbestos Data Summary

### Building T707C – RIN05Z1026

| Sample Number          | Map Survey Point Location | Room | Sample Location   | Result     |
|------------------------|---------------------------|------|---|------------|
| T707C-0325-2005-76-001 | 1                         | 1    | White tan ceiling tile  | Non-Detect |
| T707C-0325-2005-76-002 | 2                         | 1    | White tan ceiling tile  | Non-Detect |
| T707C-0325-2005-76-003 | 3                         | 1    | Tan fibrous material with white/gray resinous mater, yellow mastic, tan cove base | Non-Detect |

### Building T707C – RIN05Z1027

| Sample Number          | Map Survey Point Location | Room | Sample Location   | Result     |
|------------------------|---------------------------|------|---|------------|
| T707C-0328-2005-76-002 | 4                         | Roof | Roofing tar - side facing street in middle of roof, black resinous material | Non-Detect |

# CHEMICAL SAMPLE MAP

Building 707C  
Asbestos

PAGE 1 OF 1

Interior

Room 1

Closet 1

Closet 2

Office 1

Office 2

Exterior

North Wall






Roof

South Wall



East Wall

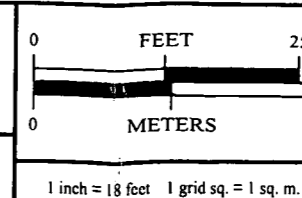
West Wall

## SURVEY MAP LEGEND

-  Asbestos Sample Location
-  Beryllium Sample Location
-  Lead Sample Location
-  RCRA/CERCLA Sample Location
-  PCB Sample Location


Neither the United States Government nor Kaiser Hill Co., nor CH2MHill, nor any agency thereof, nor any of their employees, makes any warranty, express or implied, or assumes any legal liability or responsibility for the accuracy, completeness, or usefulness of any information, apparatus, product, or process disclosed, or represents that its use would not infringe privately owned rights.


-  Open/Inaccessible Area
-  Area in Another Survey Unit



U.S. Department of Energy  
Rocky Flats Environmental Technology Site

Prepared by: GIS Dept. 303-966-7707 Prepared for:

 CH2MHILL  
Communications Group

 KAISER HILL  
CONSULTING

MAP ID: 05-0302\T707C\_ASB Mar. 30, 2005

## Beryllium Data Summary

### Building T707C – RIN05D0642

| Sample Number       | Map Survey<br>Point Location | Room | Sample Location                | Result<br>( $\mu\text{g}/100\text{ cm}^2$ ) |
|---------------------|------------------------------|------|--------------------------------|---|
| 707-03212005-00-001 | 1                            | 3    | On top of Desk                 | < 0.1                                       |
| 707-03212005-00-002 | 2                            | 3    | On top of Desk                 | < 0.1                                       |
| 707-03212005-00-003 | 3                            | 2    | Top of refrigerator            | < 0.1                                       |
| 707-03212005-00-004 | 4                            | 2    | Window sill                    | < 0.1                                       |
| 707-03212005-00-005 | 5                            | 1    | On top of electronic equipment | < 0.1                                       |

# CHEMICAL SAMPLE MAP

Building 707C  
Beryllium

PAGE 1 OF 1

Interior

Room 1

Closet 1

Closet 2

Exterior

Office 1

Office 2

North Wall

Roof

South Wall

East Wall

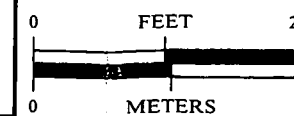
West Wall

## SURVEY MAP LEGEND

- Asbestos Sample Location
- Beryllium Sample Location
- Lead Sample Location
- RCRA/CERCLA Sample Location
- PCB Sample Location

Neither the United States Government nor Kaiser Hill Co., nor CH2MHill, nor any agency thereof, nor any of their employees, makes any warranty, express or implied, or assumes any legal liability or responsibility for the accuracy, completeness, or usefulness of any information, apparatus, product, or process disclosed, or represents that its use would not infringe privately owned rights.

- Open/Inaccessible Area
- Area in Another Survey Unit



1 inch = 18 feet 1 grid sq. = 1 sq. m.

U.S. Department of Energy  
Rocky Flats Environmental Technology Site

Prepared by: GIS Dept. 303-966-7707

Prepared for:

CH2MHILL  
Communications Group

Kaiser Hill

MAP ID: 05-03021T707C\_BE

Mar. 30, 2005

# ATTACHMENT E

## Data Quality Assessment (DQA) Detail

## DATA QUALITY ASSESSMENT (DQA)

### VERIFICATION & VALIDATION OF RESULTS

V&V of the data confirm that appropriate quality controls are implemented throughout the sampling and analysis process, and that any substandard controls result in qualification or rejection of the data in question. The required quality controls and their implementation are summarized in a tabular, checklist format for each category of data – radiological surveys and chemical analyses (specifically asbestos and beryllium).

DQA criteria and results are provided in a tabular format for each suite of surveys or chemical analyses performed; the radiological survey assessment is provided in Table E-1, asbestos in E-2 and beryllium in E-3. A data completeness summary for all results is given in Table E-4.

All relevant Quality records supporting this report are maintained in the RISS Characterization Project Files. This report will be submitted to the CERCLA Administrative Record for permanent storage within 30 days of approval by the Regulators. All radiological data are organized into Survey Packages, which correlate to unique (MARSSIM) Survey Units. Chemical data are organized by RIN (Report Identification Number) and are traceable to the sample number and corresponding sample location.

Beta/gamma survey designs were not implemented for Building T707C based on the conservatism of the transuranic limits used as DCGLs in the unrestricted release decision process. Survey designs were implemented based on the transuranic limits used as DCGLs in the unrestricted release decision process. All survey results were evaluated against, and were less than the Transuranic DCGL<sub>w</sub> (100 dpm/100cm<sup>2</sup>) and the Uranium DCGL<sub>w</sub> (5,000 dpm/100cm<sup>2</sup>) unrestricted release limits.

Consistent with EPA's G-4 DQO process, the radiological survey design (for those survey units performed per PDS requirements) was optimized by checking actual measurement results (acquired during pre-demolition surveys) against model output with original estimates. Use of actual sample/survey (result) variances in the MARSSIM DQO model confirms that an adequate number of surveys were acquired.

### SUMMARY

In summary, the data presented in this report have been verified and validated relative to the quality requirements and project decisions as stated in the original DQOs. All data are useable based on qualifications stated herein and are considered satisfactory without qualification. All media surveyed and sampled yielded results less than their associated action levels and with acceptable uncertainties.

Based upon an independent review of the radiological data, it is determined that the original project DQOs satisfied MARSSIM guidance. All facility contamination levels were below applicable unrestricted release levels. Minimum survey requirements were met, sampling/survey protocol was performed in accordance with applicable RSP procedures, survey units were properly designed and bounded, and instrument performance and calibration were within acceptable limits. All results meet the PDS unrestricted release criteria.

Chain of Custody was intact; documentation was complete, hold times were acceptable (where applicable,) and packaging integrity/custody seals were maintained throughout the sampling/analysis process. Level 2 Isolation Controls have been posted to prevent the inadvertent introduction of contamination into the facility. On this basis, Building T707C meets the unrestricted release criteria with the confidences stated herein.

**Table E-1 V&V of Radiological Surveys - Building T707C**

| V&V CRITERIA, RADIOLGICAL SURVEYS |   | K-H RSP 16.00 Series<br>MARSSIM (NUREG-1575)                      |               |   |
|-----------------------------------|---|---|---------------|---|
| QUALITY REQUIREMENTS              |   |   |               |   |
|                                   | Parameters  | Measure   | Frequency     | COMMENTS  |
| ACCURACY                          | initial calibrations  | 90%<x<110%  | ≥1            | Multi-point calibration through the measurement range encountered in the field; programmatic records.   |
|                                   | daily source checks   | 80%<x<120%  | ≥1/day        | Performed daily/within range.   |
|                                   | local area background: Field                                      | typically < 10 dpm  | ≥1/day        | All local area backgrounds were within expected ranges (i.e., no elevated anomalies.)   |
| PRECISION                         | field duplicate measurements for TSA                              | ≥5% of real survey points   | ≥10% of reals | N/A   |
| REPRESENTATIVENESS                | MARSSIM methodology: Survey Units 707C01 (interior and exterior). | statistical and biased  | NA            | Random w/ statistical confidence.   |
|                                   | Survey Maps   | NA  | NA            | Random and biased measurement locations controlled/mapped to ±1m.   |
|                                   | Controlling Documents (Characterization Pkg; RSPs)                | qualitative   | NA            | Refer to the Characterization Package (planning document) for field/sampling procedures (located in Project files); thorough documentation of the planning, sampling/analysis process, and data reduction into formats. |
| COMPARABILITY                     | units of measure  | dpm/100cm <sup>2</sup>  | NA            | Use of standardized engineering units in the reporting of measurement results.  |
| COMPLETENESS                      | Plan vs. Actual surveys<br>usable results vs. unusable            | >95%<br>>95%  | NA            | See Table E-4 for details.  |
| SENSITIVITY                       | detection limits  | TSA: ≤50 dpm/100cm <sup>2</sup><br>RA: ≤10 dpm/100cm <sup>2</sup> | all measures  | MDAs ≤ ½ DCGL <sub>w</sub> per MARSSIM guidelines.  |

**Table E-2 V&V of Asbestos Results - Building T707C**

| V&V CRITERIA, CHEMICAL ANALYSES |   | DATA PACKAGE                       |  |  |
|---------------------------------|---|------------------------------------|--|--|
| ASBESTOS                        | METHOD: EPA 600/R-93/116                                    | LAB ---->                          | Reservoirs Environmental, Inc.<br>Denver, Colorado |  |
| QUALITY REQUIREMENT             |   | RIN ---->                          | RIN05Z1026<br>RIN05Z1027                           |  |
|                                 |   | Measure                            | Frequency  | COMMENTS   |
| ACCURACY                        | Calibrations:<br>Initial/continuing                         | below<br>detectable<br>amounts     | ≥1   | Semi-quantitative, per (microscopic) visual estimation.  |
| PRECISION                       | Actual Number Sampled<br>LCSD<br>Lab duplicates             | all below<br>detectable<br>amounts | ≥ 4 samples  | Semi-quantitative, per (microscopic) visual estimation.  |
| REPRESENTATIVENESS              | COC   | Qualitative                        | NA   | Chain-of-Custody intact: completed paperwork, containers w/ custody seals.   |
|                                 | Hold times/preservation                                     | Qualitative                        | NA   | N/A  |
|                                 | Controlling Documents<br>(Plans, Procedures, maps,<br>etc.) | Qualitative                        | NA   | See original Chemical Characterization Package (planning document); for field/sampling procedures (located in project file;) thorough documentation of the planning, sampling/analysis process, and data reduction into formats. |
| COMPARABILITY                   | Measurement Units   | % by bulk<br>volume                | NA   | Use of standardized engineering units in the reporting of measurement results.   |
| COMPLETENESS                    | Plan vs. Actual samples<br>Usable results vs. unusable,     | Qualitative                        | NA   | See Table E-4, final number of samples at Certified Inspector's discretion.  |
| SENSITIVITY                     | Detection limits  |                                    | all measures                                       | N/A  |

**Table E-3 V&V of Beryllium Results - Building T707C**

| V&V CRITERIA, CHEMICAL ANALYSES |   | DATA PACKAGE               |                                     |  |
|---------------------------------|---|----------------------------|-------------------------------------|--|
| <b>BERYLLIUM</b>                | Prep: NMAM 7300<br>METHOD: OSHA ID-125G               | LAB ---->                  | Johns Manville Corp.<br>Denver, Co. |  |
| <b>QUALITY REQUIREMENTS</b>     |   | RIN ---->                  | RIN05D0642                          | <b>COMMENTS</b>                                  |
|                                 |   | Measure                    | Frequency                           |  |
| <b>ACCURACY</b>                 | Calibrations  |                            | ≥1                                  | All results were below associated action levels. |
|                                 | Initial   | linear calibration         | ≥1                                  |  |
|                                 | Continuing  | 80%<%R<120%                | ≥1                                  |  |
|                                 | LCS/MS  | 80%<%R<120%                | ≥1                                  |  |
|                                 | Blanks - lab & field                                  | <MDL                       | ≥1                                  |  |
|                                 | interference check std (ICP)                          | NA                         | NA                                  |  |
| <b>PRECISION</b>                | LCSD  | 80%<%R<120%<br>(RPD<20%)   | ≥1                                  |  |
|                                 | field duplicate                                       | all results < RL           | ≥1                                  |  |
| <b>REPRESENTATIVENESS</b>       | COC   | Qualitative                | NA                                  |  |
|                                 | hold times/preservation                               | Qualitative                | NA                                  |  |
|                                 | Controlling Documents (Plans, Procedures, maps, etc.) | Qualitative                | NA                                  |  |
| <b>COMPARABILITY</b>            | measurement units                                     | ug/100cm <sup>2</sup>      | NA                                  |  |
| <b>COMPLETENESS</b>             | Plan vs. Actual samples                               | >95%                       | NA                                  |  |
|                                 | usable results vs. unusable                           | >95%                       |                                     |  |
| <b>SENSITIVITY</b>              | detection limits                                      | MDL of<br>0.00084 ug/swipe | all measures                        |  |

**Table E-4 Data Completeness Summary - Building T707C**

| ANALYTE      | Building/Area/<br>Unit  | Sample Number<br>Planned<br>(Real & QC) <sup>A</sup>   | Sample Number<br>Taken<br>(Real & QC)  | Project Decisions<br>(Conclusions) &<br>Uncertainty  | Comments<br>(RIN, Analytical Method, Qualifications, etc.)  |
|--------------|---|--|--|--|---|
| Asbestos     | Building T707C<br>(interior and<br>exterior)  | 5 samples<br>(biased)  | 4 samples<br>(biased)  | No ACM present,<br>all results < 1% by<br>volume   | 40 CFR 763.86; 5 CCR 1001-10; EPA 600/R-93/116<br><br>RIN05Z1026: sample map locations 1, 2 and 3<br>RIN05Z1027: sample map location 4                  |
| Beryllium    | Building T707C<br>(interior)  | 5 samples<br>(biased)  | 5 samples<br>(biased)  | No beryllium<br>contamination found<br>at any location, all<br>results below the<br>regulatory limit       | OSHA ID-125G<br><br>RIN05D0642<br><br>No results above action level (0.2ug/100cm <sup>2</sup> ) or<br>investigative level (0.1 ug/100cm <sup>2</sup> ). |
| Radiological | Survey Area 0<br>Survey Unit:<br>707C01<br>Building T707C<br>(interior and<br>exterior) | 30 $\alpha$ TSA<br>(15 random/15<br>biased)<br><br>and<br><br>30 $\alpha$ Smears<br>(15 random/15<br>biased)<br><br>2 QC TSA<br><br>10% scan of the<br>interior and exterior<br>surfaces | 30 $\alpha$ TSA<br>(15 random/15<br>biased)<br><br>and<br><br>30 $\alpha$ Smears<br>(15 random/15<br>biased)<br><br>2 QC TSA<br><br>10% scan of the<br>interior and exterior<br>surfaces | No elevated<br>contamination at<br>any location; all<br>values below PDS<br>unrestricted release<br>levels | Transuranic DCGLs used.   |